

FILE 'HCAPLUS' ENTERED AT 16:11:59 ON 16 MAR 2010

L1 1163 S POLYSIALIC OR POLYSIALATE OR COLOMINIC
L2 2358 S (REDUCING END)
L3 15 S L1 AND L2
L4 280618 S CONJUGAT?
L5 4 S L3 AND L4
L6 9 S L3 AND (PY<2004 OR AY<2004 OR PRY<2004)
L7 19279 S SIALIC ACID
L8 69 S L2 AND L7
L9 4 S L4 AND L8
L10 1094518 S OXIDIZ? OR OXIDAT?
L11 4 S L8 AND L10
L12 2 S L11 NOT L9

FILE 'REGISTRY' ENTERED AT 17:02:22 ON 16 MAR 2010

L13 STRUCTURE UPLOADED
L14 9 S L13
L15 6152 S L13 SSS FULL

FILE 'HCAPLUS' ENTERED AT 17:03:27 ON 16 MAR 2010

L16 3680 S L15
L17 24275 S SIALIC OR POLYSIALIC OR COLOMINIC
L18 84 S L16 AND L17
L19 46 S L18 AND (PY<2004 OR AY<2004 OR PRY<2004)
L20 46 S L19 NOT (L6 OR L9 OR L12)
L21 1094518 S OXIDIZ? OR OXIDAT?
L22 0 S L20 AND L21

FILE 'STNGUIDE' ENTERED AT 17:04:43 ON 16 MAR 2010

FILE 'HCAPLUS' ENTERED AT 17:05:01 ON 16 MAR 2010

L23 280618 S CONJUGAT?
L24 4 S L19 AND L23

| | | |
|----------------------|------------|---------|
| => file hcaplus | | |
| COST IN U.S. DOLLARS | SINCE FILE | TOTAL |
| | ENTRY | SESSION |
| FULL ESTIMATED COST | 0.22 | 0.22 |

FILE 'HCAPLUS' ENTERED AT 16:11:59 ON 16 MAR 2010
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FILE COVERS 1907 - 16 Mar 2010 VOL 152 ISS 12
 FILE LAST UPDATED: 15 Mar 2010 (20100315/ED)
 REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2009
 USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2009

HCAplus now includes complete International Patent Classification (IPC) reclassification data for the first quarter of 2010.

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<http://www.cas.org/legal/infopolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> s polysialic or polysialate or colominic
      861 POLYSIALIC
      274 POLYSIALATE
      307 COLOMINIC
L1      1163 POLYSIALIC OR POLYSIALATE OR COLOMINIC
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=> s (reducing end)
      474652 REDUCING
      670314 END
L2      2358 (REDUCING END)
          (REDUCING(W)END)
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=> s l1 and l2
L3      15 L1 AND L2
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=> s conjugat?
L4      280618 CONJUGAT?
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=> s l3 and l4
L5      4 L3 AND L4
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=> s l3 and (PY<2004 or AY<2004 or PRY<2004)
      24050493 PY<2004
      4827512 AY<2004
      4301088 PRY<2004
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L6 9 L3 AND (PY<2004 OR AY<2004 OR PRY<2004)

=> d 16 1-9 ti abs bib

L6 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
TI Sialic acid derivatives for protein derivatization and conjugation
AB Derivs. are synthesized of starting materials, usually polysaccharides, having sialic acid at the reducing terminal end, in which the reducing terminal unit is transformed into an aldehyde group. Where the polysaccharide has a sialic acid unit at the non-reducing end it may be passivated, for instance by converting into hydroxyl-substituted moiety. The derivs. may be reacted with substrates, for instance containing amine or hydrazine groups, to form non-cross-linked polysialylated compds. The substrates may, for instance, be therapeutically useful drugs peptides or proteins or drug delivery systems. Insulin and polysialylated insulin were tested for their ability to reduce blood glucose level in normal female T/O outbred mice (22-24 g body weight).
AN 2005:158700 HCAPLUS <<LOGINID::20100316>>
DN 142:240674
TI Sialic acid derivatives for protein derivatization and conjugation
IN Jain, Sanjay; Laing, Peter; Gregoriadis, Gregory; Hreczuk-Hrist, Dale Howard; Papaoannou, Yiannis
PA Lipoxen Technologies Limited, UK
SO PCT Int. Appl., 82 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 3

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|-----------------|--------------|
| PI | WO 2005016974 | A1 | 20050224 | WO 2004-GB3511 | 20040812 <-- |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, VZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | EP 1654290 | A1 | 20060510 | EP 2004-768074 | 20040812 <-- |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK | | | | |
| | JP 2007501889 | T | 20070201 | JP 2006-523058 | 20040812 <-- |
| | RU 2333223 | C2 | 20080910 | RU 2006-107546 | 20040812 <-- |
| | WO 2006016161 | A1 | 20060216 | WO 2005-GB3149 | 20050812 |
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| | | | | |
|--|----|----------|------------------|--------------|
| EP 1789454 | A1 | 20070530 | EP 2005-794240 | 20050812 |
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| CN 101039964 | A | 20070919 | CN 2005-80034509 | 20050812 |
| JP 2008510024 | T | 20080403 | JP 2007-525353 | 20050812 |
| US 20070191597 | A1 | 20070816 | US 2006-568043 | 20061201 <-- |
| US 20080132696 | A1 | 20080605 | US 2007-660133 | 20070828 |
| PRAI EP 2003-254989 | A | 20030812 | <-- | |
| WO 2004-GB3511 | W | 20040812 | | |
| EP 2005-251016 | A | 20050223 | | |
| WO 2005-GB3149 | W | 20050812 | | |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 142:240674

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
 TI Progress in the synthesis of C-glycoside analogues of biologically important glycoconjugates
 AB Ulosonic acids are distinctive, functionally diverse monosaccharides with an anomeric carboxylic acid moiety, a deoxygenated C-3 ring carbon, and a glycerol side chain at the C-6 position. The ulosonic acid, N-acetyl neuraminic acid (Neu5Ac), is commonly found at the non-reducing end of cell surface glycan chains where it mediates biol. events including pathogen infection and propagation, and the inter- and intracellular processes of cell adhesion and signaling. While ulosonic acids are attractive targets for synthesis as small mol. inhibitors and vaccines, their lability and poor immunogenicity have led us to develop a synthetic strategy to prepare 'C'-glycoside analogs of some biol. relevant targets including sTn, GM3, GM4, GD3, and polysialic acid. Reductive coupling methodologies, pioneered in our lab, utilizing samarium iodide is an integral step in these ongoing syntheses described.
 AN 2003:630130 HCAPLUS <<LOGINID::20100316>>
 TI Progress in the synthesis of C-glycoside analogues of biologically important glycoconjugates
 AU Linhardt, Robert J.; Ress, Dino K.; Sikkander, Sulthan A.; Chen, Chi-Chang
 CS Departments of Chemistry, Chemical Engineering and Biology, Rensselaer Polytechnic Institute, Troy, NY, 12180, USA
 SO Abstracts of Papers, 226th ACS National Meeting, New York, NY, United States, September 7-11, 2003 (2003), CARB-003 Publisher: American Chemical Society, Washington, D. C.
 CODEN: 69EKY9
 DT Conference; Meeting Abstract
 LA English

L6 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
 TI Biosynthesis of the Escherichia coli K4 capsule polysaccharide. A parallel system for studies of glycosyltransferases in chondroitin formation
 AB E. coli K4 bacteria synthesize a capsule polysaccharide (GalNAc-GlcA(fructose))_n with the carbohydrate backbone identical to chondroitin. GlcA- and GalNAc-transferase activities from the bacterial membrane were assayed with receptors derived from the capsule polysaccharide and radiolabeled UDP-[14C]GlcA and UDP-[3H]GalNAc, resp. Defructosylated oligosaccharides (chondroitin) could serve as substrates for both the GlcA- and the GalNAc-transferases. The radiolabeled products were completely degraded with chondroitinase AC; the [14C]GlcA unit could be removed by β-D-glucuronidase, and the [3H]GalNAc could be removed by β-N-acetylhexosaminidase. A fructosylated oligosaccharide acceptor tested for GlcA-transferase activity was inactive. These results indicate that the chain elongation reaction of the K4 polysaccharide

proceeds in the same way as the polymerization of the chondroitin chain, by the addition of the monosaccharide units one by one to the nonreducing end of the polymer. This makes the biosynthesis of the K4 polysaccharide an interesting parallel system for studies of chondroitin sulfate biosynthesis. In the biosynthesis of capsule polysaccharides from *E. coli*, a similar mechanism has earlier been demonstrated for polysialic acid (NeuNAc)_n and for the K5 polysaccharide (GlcA β 1-4GlcNAc α -4)_n. In contrast, chain elongation of hyaluronan (GlcA β 1-3GlcNAc β 1-4)_n is claimed to occur at the reducing end.

AN 1997:97344 HCAPLUS <<LOGINID::20100316>>

DN 126:183619

OREF 126:35401a

TI Biosynthesis of the *Escherichia coli* K4 capsule polysaccharide. A parallel system for studies of glycosyltransferases in chondroitin formation

AU Lidholt, Kerstin; Fjelstad, Maria

CS Department Medical and Physiological Chemistry, University UPPSALA, Uppsala, S-751 23, Swed.

SO Journal of Biological Chemistry (1997), 272(5), 2682-2687

CODEN: JBCHA3; ISSN: 0021-9258

PB American Society for Biochemistry and Molecular Biology

DT Journal

LA English

OSC.G 29 THERE ARE 29 CAPLUS RECORDS THAT CITE THIS RECORD (31 CITINGS)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN

TI Synthesis, characterization and properties of sialylated catalase

AB Colominic acid (CA), a α -(2 \rightarrow 8) N-acetylneuraminic acid (sialic acid) polymer (average mol. weight of 10 kDa) was activated by periodate oxidation of carbon 7 at the non-reducing end of the saccharide. The oxidized CA was then coupled to catalase by reductive amination in the presence of sodium cyanoborohydride. The extent of sialylation of catalase, estimated by ammonium sulfate precipitation

as

3.8 \pm 0.4 (mean \pm S.D.) moles of CA per mol of catalase, did not improve significantly when depolymerized. CA was used in the coupling reaction. At the end of the coupling reaction, sialylated catalase exhibited a two-fold (70%) retention of initial activity compared to enzyme controls (29-35%) subjected to the same conditions. Formation of sialylated catalase was confirmed by ammonium sulfate or trichloroacetic acid precipitation, mol. sieve chromatog. and SDS-PAGE electrophoresis. Enzyme kinetics studies revealed an increase in the apparent *K_m* of the enzyme from 70.0 (native) to 122.9 mmol l⁻¹ H₂O₂ (sialylated catalase) indicating a reduction of enzyme affinity for the substrate (hydrogen peroxide) on sialylation. Compared to native enzyme, sialylated catalase was much more stable in the presence of specific proteinases, completely resisting degradation by chymotrypsin and losing only some of its activity in the presence of trypsin. The increased stability conferred to catalase by sialylation agrees with similar observations on enzymes modified by other hydrophilic mols. (e.g., monomethoxypoly(ethyleneglycol)) and suggests that steric stabilization with the biodegradable polysialic acid may prove an alternative means to render therapeutic proteins more effective in vivo.

AN 1996:173057 HCAPLUS <<LOGINID::20100316>>

DN 124:254533

OREF 124:47033a,47036a

TI Synthesis, characterization and properties of sialylated catalase

AU Fernandes, Ana I.; Gregoriadis, Gregory

CS Centre for Drug Delivery Research, School of Pharmacy, University of London, 29/39, Brunswick Square, London, WC1N 1AX, UK

SO Biochimica et Biophysica Acta, Protein Structure and Molecular Enzymology
(1996), 1293(1), 90-6
CODEN: BBAEDZ; ISSN: 0167-4838
PB Elsevier B.V.
DT Journal
LA English
OSC.G 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)

L6 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
TI Molecular mechanisms of capsule expression in Neisseria meningitidis
serogroup B
AB A review with 32 refs. The enzymes and proteins for biosynthesis and
surface translocation of the capsular polysaccharide of N. meningitidis
serogroup B, which consists of α -2,8 linked polysialic
acid, are expressed by a 24 kb chromosomal gene cluster (cps). Within cps
five functional regions have been identified. Region A encodes all
enzymes necessary for polysialic acid biosynthesis. The
capsular polysaccharide, which avgs. 200 NeuNAc residues in length, is
synthesized completely intracellularly. The gene products of region B
substitute the polysaccharide chains with a phospholipid at the
reducing end. Phospholipid substitution is crucial for
translocation of the polysaccharide to the cell surface, which is directed
by the gene products encoded by region C. The region C encoded proteins
share strong homologies to members of the ABC (ATP-binding cassette)
superfamily of active transporters. The same ATP-dependent transport
mechanism for capsular polysaccharides also seems to direct capsular
polysaccharides in H. influenzae and E. coli to the surface, suggesting a
common evolutionary origin of capsule expression in these bacterial
species.

AN 1993:577176 HCAPLUS <<LOGINID::20100316>>
DN 119:177176
OREF 119:31579a,31582a
TI Molecular mechanisms of capsule expression in Neisseria meningitidis
serogroup B
AU Frosch, Matthias; Edwards, Ulrike
CS Inst. Med. Microbiol., Med. Sch. Hannover, Hannover, 3000/61, Germany
SO Polysialic Acid (1993), 49-57. Editor(s): Roth, Juergen;
Rutishauser, Urs; Troy, Frederick A., II. Publisher: Birkhaeuser, Basel,
Switz.
CODEN: 59FNAM
DT Conference; General Review
LA English
OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

L6 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
TI Giant liposomes as model membranes for immunological studies: spontaneous
insertion of purified K1-antigen (poly- α -2,8-NeuAc) of Escherichia
coli
AB A flow chamber was constructed to use giant liposomes (diameter 5-50 μ m)
as model membranes for immunol. studies and other expts. involving
interaction with water-soluble compds. As an example of immunol. importance,
the insertion of purified K-antigen from E. coli K1 was studied. Despite
its large hydrophilic part (poly- α -2,8-NeuAc), which is capped at
its potential reducing end with phosphatidic acid
acting as a lipid anchor group, this water-soluble material is readily
incorporated into liposomal membranes of dimyristoylphosphatidylcholine
(DMPC). Without the lipid residue, however, no binding of
poly- α -2,8-NeuAc to the liposomes was observed. This could be shown by
using colominic acid, an oligomeric form of α -2,8-NeuAc
with free reducing ends instead of purified K1-antigen. The possibility
for further manipulation of this model system was shown by using a

poly- α -2,8-NeuAc cleaving enzyme (endoneuraminidase). The function of the endoneuraminidase was proven by showing no binding of the antibody after enzyme treatment of K1-bearing liposomes as well as by rapid loss of fluorescence of a previously bound FITC-antibody.

AN 1991:205340 HCAPLUS <<LOGINID::20100316>>

DN 114:205340

OREF 114:34609a,34612a

TI Giant liposomes as model membranes for immunological studies: spontaneous insertion of purified K1-antigen (poly- α -2,8-NeuAc) of *Escherichia coli*

AU Decher, Gero; Ringsdorf, Helmut; Venzmer, Joachim; Bitter-Suermann, Dieter; Weisgerber, Christoph

CS Inst. Org. Chem., Johannes Gutenberg-Univ., Mainz, D-6500, Germany

SO Biochimica et Biophysica Acta, Biomembranes (1990), 1023(3), 357-64

CODEN: BBBMBS; ISSN: 0005-2736

DT Journal

LA English

OSC.G 11 THERE ARE 11 CAPLUS RECORDS THAT CITE THIS RECORD (11 CITINGS)

L6 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN

TI Polyacrylamide gel electrophoresis of the capsular polysaccharides of *Escherichia coli* K1 and other bacteria

AB Methods were developed for the polyacrylamide gel electrophoretic anal. of capsular polysaccharides of bacteria with *E. coli* K1 as a model. Conditions were determined for the rapid and gentle extraction of the K1 polysaccharide by incubation of the bacteria in a volatile buffer and for the subsequent removal of the putative phospholipid moiety attached to the reducing end of the polysaccharide. Detection of the polysaccharides after gel electrophoresis was carried out by fluorog. of samples labeled by NaB³H₄ reduction or by combined alcian blue and Ag staining. The smallest components could be detected only by fluorog., owing to diffusion during staining. Components of the *E. coli* K1 polysialic acid capsule ranging from monomers to 80 sialic-acid-unit-containing polymers could be separated as distinct bands in a ladderlike pattern. A maximum chain length of 160-230 sialyl residues was estimated for the bulk of the K1 polysaccharide from the nearly linear reciprocal relation between the logarithm of the mol. size and the distance of migration. Gel electrophoresis of capsular polysaccharides of other bacterial species revealed different electrophoretic mobilities for each polysaccharide, with a ladderlike pattern displayed by the fastest-moving components. There are many potential applications of this facile method for the determination of the sizes of mols. in a polydisperse polysaccharide sample. When combined with the simple method for the isolation of the capsule, as in the case of the K1 capsule, it provides an efficient tool for the characterization and comparison of the capsular polysaccharides of bacteria.

AN 1988:451374 HCAPLUS <<LOGINID::20100316>>

DN 109:51374

OREF 109:8595a,8598a

TI Polyacrylamide gel electrophoresis of the capsular polysaccharides of *Escherichia coli* K1 and other bacteria

AU Pelkonen, Sinikka; Hayrinen, Jukka; Finne, Jukka

CS Biocent., Univ. Basel, Basel, CH-4056, Switz.

SO Journal of Bacteriology (1988), 170(6), 2646-53

CODEN: JOBAAY; ISSN: 0021-9193

DT Journal

LA English

OSC.G 40 THERE ARE 40 CAPLUS RECORDS THAT CITE THIS RECORD (40 CITINGS)

L6 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN

TI Cleavage of the polysialosyl units of brain glycoproteins by a bacteriophage endosialidase. Involvement of a long oligosaccharide segment in molecular interactions of polysialic acid
 AB Polysialosyl chains containing α 2-8-linked N-acetylneuraminic acid have been suggested to modulate the biol. activity of a neural cell adhesion mol. Polysialosyl glycopeptides isolated from developing brain were incubated with a bacteriophage containing endosialidase. Sialic acid oligomers of ≤ 7 residues long were liberated both from the glycopeptides and colominic acid. The substrate specificity of the endosialidase was studied with sialic acid oligomers of different sizes prepared from colominic acid. The endosialidase required the simultaneous presence adjacent to the site of cleavage of a min. of 3 sialic acid residues on the distal side and a min. of 5 sialic acid residues on the proximal (reducing end) side. From the fragments liberated by the enzyme, the existence of polysialic acid chains ≥ 12 residues long in the glycopeptides was concluded. This was also supported by the interaction of the glycopeptides with a meningococcal group B polysaccharide antiserum, which require ≥ 10 residues for binding. Thus, brain polysialosyl glycopeptides contain a long polysialic acid segment, which is also specifically needed for certain mol. interactions. The implications of the findings for the biol. properties of the neural cell adhesion mol. are discussed.
 AN 1985:127776 HCAPLUS <<LOGINID::20100316>>
 DN 102:127776
 OREF 102:19989a,19992a
 TI Cleavage of the polysialosyl units of brain glycoproteins by a bacteriophage endosialidase. Involvement of a long oligosaccharide segment in molecular interactions of polysialic acid
 AU Finne, Jukka; Makela, P. Helena
 CS Dep. Biochem., Univ. Basel, Basel, CH-4056, Switz.
 SO Journal of Biological Chemistry (1985), 260(2), 1265-70
 CODEN: JBCHA3; ISSN: 0021-9258
 DT Journal
 LA English
 OSC.G 46 THERE ARE 46 CAPLUS RECORDS THAT CITE THIS RECORD (46 CITINGS)
 L6 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2010 ACS on STN
 TI Sialic acids. XII. Synthesis of colominic acid by a sialyltransferase from Escherichia coli-K-235
 GI For diagram(s), see printed CA Issue.
 AB Partial purification of an E. coli sialyltransferase that transfers 1-14C-labeled N-acetylneuraminic acid (I) from 1-14C-labeled cytidine 5'-mono-phospho-N-acetylneuraminic acid to colominic acid (II) has been achieved, the enzyme being detected in a particulate fraction. Kinetics of the reaction and substrate specificity are reported. Both endogenous II, bound to the enzyme fraction, and purified, soluble exogenous II acted as I acceptors, the endogenous acceptor being much more effective. The presence of 1.2M ammonium sulfate yielded a 4-fold increase of I incorporation into the endogenous II, and was required for I incorporation into the soluble exogenous II. Thus, chain elongation probably proceeds at the nonreducing termini of the polymer, comparable to the formation of glycogen, rather than at the reducing end, as in the case of the bacterial lipopolysaccharides.
 AN 1971:547989 HCAPLUS <<LOGINID::20100316>>
 DN 75:147989
 OREF 75:23351a,23354a
 TI Sialic acids. XII. Synthesis of colominic acid by a sialyltransferase from Escherichia coli-K-235
 AU Kundig, F. Dodyk; Aminoff, David; Roseman, Saul
 CS Rackham Arthritis Res. Unit, Univ. Michigan, Ann Arbor, MI, USA
 SO Journal of Biological Chemistry (1971), 246(8), 2543-50

CODEN: JBCHA3; ISSN: 0021-9258
DT Journal
LA English
OSC.G 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

=> d his

(FILE 'HOME' ENTERED AT 16:11:49 ON 16 MAR 2010)

FILE 'HCAPLUS' ENTERED AT 16:11:59 ON 16 MAR 2010

L1 1163 S POLYSIALIC OR POLYSIALATE OR COLOMINIC
L2 2358 S (REDUCING END)
L3 15 S L1 AND L2
L4 280618 S CONJUGAT?
L5 4 S L3 AND L4
L6 9 S L3 AND (PY<2004 OR AY<2004 OR PRY<2004)

=> log hold

| | | |
|--|------------|---------|
| COST IN U.S. DOLLARS | SINCE FILE | TOTAL |
| | ENTRY | SESSION |
| FULL ESTIMATED COST | 33.72 | 33.94 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL |
| | ENTRY | SESSION |
| CA SUBSCRIBER PRICE | -7.65 | -7.65 |

SESSION WILL BE HELD FOR 120 MINUTES
STN INTERNATIONAL SESSION SUSPENDED AT 16:13:04 ON 16 MAR 2010

Connecting via Winsock to STN

Welcome to STN International! Enter x:X

LOGINID:SSPTAEXO1623

PASSWORD:

* * * * * RECONNECTED TO STN INTERNATIONAL * * * * *
SESSION RESUMED IN FILE 'HCAPLUS' AT 16:41:52 ON 16 MAR 2010
FILE 'HCAPLUS' ENTERED AT 16:41:52 ON 16 MAR 2010
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| | | |
|--|------------|---------|
| COST IN U.S. DOLLARS | SINCE FILE | TOTAL |
| | ENTRY | SESSION |
| FULL ESTIMATED COST | 33.72 | 33.94 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | SINCE FILE | TOTAL |
| | ENTRY | SESSION |
| CA SUBSCRIBER PRICE | -7.65 | -7.65 |

=> s sialic acid

23865 SIALIC
5014277 ACID
L7 19279 SIALIC ACID
(SIALIC(W)ACID)

=> s 12 and 17

L8 69 L2 AND L7

=> s 14 and 18

L9 4 L4 AND L8

=> d 19 1-4 ti abs bib

L9 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN

TI Activated sialic acid derivatives for protein
derivatization and conjugation

AB Derivs. of polysialic acids PSAs are synthesized, in which a reducing
and/or non-reducing end terminal sialic
acid unit is transformed into a N-hydroxysuccinimide (NHS) group.
The derivs. may be reacted with substrates, for instance substrates containing
amine or hydrazine groups, to form non-crosslinked/crosslinked
polysialylated compds. The substrates may, for instance, be
therapeutically useful drugs, peptides or proteins, or drug delivery
systems.

AN 2006:886313 HCAPLUS <<LOGINID::20100316>>

DN 145:273580

TI Activated sialic acid derivatives for protein
derivatization and conjugation

IN Jain, Sanjay; Papaioannou, Ioannis; Thobhani, Smita

PA Lipoxen Technologies Limited, UK

SO PCT Int. Appl., 61pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 3

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|-----------------|----------|
| PI | WO 2006090119 | A1 | 20060831 | WO 2006-GB540 | 20060216 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| | WO 2006016168 | A2 | 20060216 | WO 2005-GB3160 | 20050812 |
| | WO 2006016168 | A3 | 20060504 | | |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM | | | | |
| EP | 1853634 | A1 | 20071114 | EP 2006-709777 | 20060216 |
| | R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR | | | | |

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|---------------------|----|----------|------------------|----------|
| JP 2008531764 | T | 20080814 | JP 2007-555696 | 20060216 |
| IN 2007DN06400 | A | 20070831 | IN 2007-DN6400 | 20070817 |
| US 20080262209 | A1 | 20081023 | US 2007-816823 | 20070821 |
| CN 101160326 | A | 20080409 | CN 2006-80012749 | 20071017 |
| PRAI EP 2005-251017 | A | 20050223 | | |
| WO 2005-GB3160 | A | 20050812 | | |
| WO 2004-GB3488 | A | 20040812 | | |
| EP 2005-251015 | A | 20050223 | | |
| WO 2006-GB540 | W | 20060216 | | |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 145:273580

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN

TI Sialic acid derivatives for protein derivatization and conjugation

AB Derivs. are synthesized of starting materials, usually polysaccharides, having sialic acid at the reducing terminal end, in which the reducing terminal unit is transformed into an aldehyde group. Where the polysaccharide has a sialic acid unit at the non-reducing end it may be passivated, for instance by converting into hydroxyl-substituted moiety. The derivs. may be reacted with substrates, for instance containing amine or hydrazine groups, to form non-cross-linked polysialylated compds. The substrates may, for instance, be therapeutically useful drugs peptides or proteins or drug delivery systems. Insulin and polysialylated insulin were tested for their ability to reduce blood glucose level in normal female T/O outbred mice (22-24 g body weight).

AN 2005:158700 HCAPLUS <<LOGINID::20100316>>

DN 142:240674

TI Sialic acid derivatives for protein derivatization and conjugation

IN Jain, Sanjay; Laing, Peter; Gregoriadis, Gregory; Hreczuk-Hrist, Dale Howard; Papaoannou, Yiannis

PA Lipoxen Technologies Limited, UK

SO PCT Int. Appl., 82 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 3

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | WO 2005016974 | A1 | 20050224 | WO 2004-GB3511 | 20040812 |
| | W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW | | | | |
| | RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG | | | | |
| | EP 1654290 | A1 | 20060510 | EP 2004-768074 | 20040812 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK | | | | |
| | JP 2007501889 | T | 20070201 | JP 2006-523058 | 20040812 |
| | RU 2333223 | C2 | 20080910 | RU 2006-107546 | 20040812 |
| | WO 2006016161 | A1 | 20060216 | WO 2005-GB3149 | 20050812 |

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

EP 1789454 A1 20070530 EP 2005-794240 20050812

R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR

CN 101039964 A 20070919 CN 2005-80034509 20050812

JP 2008510024 T 20080403 JP 2007-525353 20050812

US 20070191597 A1 20070816 US 2006-568043 20061201

US 20080132696 A1 20080605 US 2007-660133 20070828

PRAI EP 2003-254989 A 20030812

WO 2004-GB3511 W 20040812

EP 2005-251016 A 20050223

WO 2005-GB3149 W 20050812

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OS MARPAT 142:240674

OSC.G 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN

TI Synthesis and Immunological Properties of N-Modified GM3 Antigens as Therapeutic Cancer Vaccines

AB The problem of immunotolerance to GM3, an important tumor-associated trisaccharide antigen, seriously hinders its usage in cancer vaccine development. To solve this problem, the keyhole limpet hemocyanin (KLH) conjugates of a series of GM3 derivs. were synthesized and screened as therapeutic cancer vaccines. First, the β -linked anomeric azides of differently N-acylated GM3 analogs were prepared by a highly convergent procedure. Next, a pentenoyl group was linked to the reducing end of the carbohydrate antigens following selective reduction of the azido group. The linker was thereafter ozonolyzed to give an aldehyde functionality permitting the conjugation of the antigens to KLH via reductive amination. Finally, the immunol. properties of the resultant glycoconjugates were studied in C57BL/6 mice by assessing the titers of specific antibodies induced by the GM3 analogs. While KLH-GM3 elicited low levels of immune response, the KLH conjugates of N-propionyl, N-butanoyl, N-iso-butanoyl, and N-phenylacetyl GM3s induced robust immune reactions with antibodies of multiple isotypes, indicating significantly improved and T-cell dependent immune responses that lead to isotype switching, affinity maturation, and the induction of immunol. "memory". It was suggested that GM3PhAc-KLH is a promising vaccine candidate for glycoengineered immunotherapy of cancer with GM3 as the primary target.

AN 2005:31569 HCAPLUS <<LOGINID::20100316>>

DN 142:153773

TI Synthesis and Immunological Properties of N-Modified GM3 Antigens as Therapeutic Cancer Vaccines

AU Pan, Yanbin; Chefalo, Peter; Nagy, Nancy; Harding, Clifford; Guo, Zhongwu
CS Departments of Chemistry and Pathology, Case Western Reserve University, Cleveland, OH, 44106-7078, USA

SO Journal of Medicinal Chemistry (2005), 48(3), 875-883

CODEN: JMCMAR; ISSN: 0022-2623

PB American Chemical Society

DT Journal

LA English

OS CASREACT 142:153773

OSC.G 25 THERE ARE 25 CAPLUS RECORDS THAT CITE THIS RECORD (25 CITINGS)

RE.CNT 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN

TI Synthesis and immunologic studies of conjugate vaccines made of modified gm3 antigens

AB GM3 is an important antigen on melanoma, and it is the mol. basis of many studies on therapeutic vaccines for melanoma. However, the major problem with GM3 is immunotolerance, i.e., it fails to introduce immune reaction in melanoma patients. To overcome this problem, the KLH-conjugates of sialyl N-modified GM3 antigens were prepared and studied. The key features of the synthesis were using the N-trifluoroacetyl sialic acid as the reaction intermediate for easier deprotection and further modification of GM3 and using an azido group at the reducing end of GM3 to facilitate the conjugation. Therefore, after glycosylation of 1-azido-2'3'6'-2,6-acetylated--A-lactose with peracetylated N-trifluoroacetylated sialic acid to get the protected GM3, the protection groups were removed and several acyls, e.g., propionic, n-butyric, i-butyric, phenylacetyl and 3,3,3-trifluoropropionic group, were introduced to the N-position. Finally, the azido group was reduced and linked to a 4-pentenoyl linker, which after ozonolysis was effectively conjugated with KLH by reductive amination. These conjugates were then studied in mice, which showed preliminarily to be more immunol. than the KLH conjugate of GM3.

AN 2003:179461 HCAPLUS <<LOGINID::20100316>>

TI Synthesis and immunologic studies of conjugate vaccines made of modified gm3 antigens

AU Guo, Zhongwu; Pan, Yanbin

CS Department of Chemistry, Case Western Reserve University, Cleveland, OH, 44106, USA

SO Abstracts of Papers, 225th ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003 (2003), CARB-063 Publisher: American Chemical Society, Washington, D. C.

CODEN: 69DSA4

DT Conference; Meeting Abstract

LA English

=> s oxidiz? or oxidat?

464994 OXIDIZ?

768506 OXIDAT?

L10 1094518 OXIDIZ? OR OXIDAT?

=> s l18 and l10

L11 4 L8 AND L10

=> s l11 not l9

L12 2 L11 NOT L9

=> d l12 1-2 ti abs bib

L12 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2010 ACS on STN

TI Synthesis, characterization and properties of sialylated catalase

AB Colominic acid (CA), a α -(2 \rightarrow 8) N-acetylneuraminic acid (

sialic acid) polymer (average mol. weight of 10 kDa) was activated by periodate oxidation of carbon 7 at the non-reducing end of the saccharide. The oxidized CA was then coupled to catalase by reductive amination in the presence of sodium cyanoborohydride. The extent of sialylation of catalase, estimated by ammonium sulfate precipitation as 3.8 ± 0.4 (mean \pm S.D.) moles of CA per mol of catalase, did not improve significantly when depolymerized CA was used in the coupling reaction. At the end of the coupling reaction, sialylated catalase exhibited a two-fold (70%) retention of initial activity compared to enzyme controls (29-35%) subjected to the same conditions. Formation of sialylated catalase was confirmed by ammonium sulfate or trichloroacetic acid precipitation, mol. sieve chromatog. and SDS-PAGE electrophoresis. Enzyme kinetics studies revealed an increase in the apparent K_m of the enzyme from 70.0 (native) to 122.9 mmol l⁻¹ H₂O₂ (sialylated catalase) indicating a reduction of enzyme affinity for the substrate (hydrogen peroxide) on sialylation. Compared to native enzyme, sialylated catalase was much more stable in the presence of specific proteinases, completely resisting degradation by chymotrypsin and losing only some of its activity in the presence of trypsin. The increased stability conferred to catalase by sialylation agrees with similar observations on enzymes modified by other hydrophilic mols. (e.g., monomethoxypoly(ethyleneglycol)) and suggests that steric stabilization with the biodegradable polysialic acid may prove an alternative means to render therapeutic proteins more effective in vivo.

AN 1996:173057 HCAPLUS <<LOGINID::20100316>>

DN 124:254533

OREF 124:47033a,47036a

TI Synthesis, characterization and properties of sialylated catalase

AU Fernandes, Ana I.; Gregoriadis, Gregory

CS Centre for Drug Delivery Research, School of Pharmacy, University of London, 29/39, Brunswick Square, London, WC1N 1AX, UK

SO Biochimica et Biophysica Acta, Protein Structure and Molecular Enzymology (1996), 1293(1), 90-6

CODEN: BBAEDZ; ISSN: 0167-4838

PB Elsevier B.V.

DT Journal

LA English

OSC.G 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (8 CITINGS)

L12 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2010 ACS on STN

TI Determination of the bonding-site of sialic acid residues by periodate oxidation

AB cf. CA 57, 2300e. Sialic acid-containing oligosaccharides from mother's milk and cow colostrum were studied by a series of reactions involving periodate oxidation, NaBH₄ reduction, and mild acid hydrolysis; thus was shown that the sialic acid residue was ketosidically linked to either the 3- or 6-position of the D-galactose residue or to the 6-position of 2-acetamido-2-deoxy-D-glucose residue or to the 8-position of the sialic acid residue. Chromatographic solvents were: 5:5:3:1 EtOAc-pyridine-H₂O-AcOH (A); 7: 2: 2 EtOAc-AcOH-H₂O (B); 6: 4: 3 BuOH-pyridine-H₂O (C); or by the ascending method with solvent A. Mobilities were relative to solvent front (R_f), or to Na sialate (R₈, or to Sial-(2 → 3)-Gal-(1 → 4)-G (I) (CA 54,312h) (R_t). Oligosaccharide (0.02 millimole) was neutralized with 0.2N Na₂CO₃ and oxidized 24-28 hrs. at 4° in the dark in a buffered solution of pH 4.4 containing 0.2M OAc- and 0.1M NaIO₄; IO₄- was 2.5 times the theoretical consumption. Excess NaIO₄ was destroyed [(CH₂OH)₂ or (CH₃CO)₂], and the solution was reduced with NaBH₄. Oligosaccharide degradation from the reducing end was carried out by the following overoxidation: After the usual periodate oxidation and destruction of excess NaIO₄, the

solution was adjusted to pH 7.5-8.0 with Na₂CO₃, kept 45-60 min. at room temperature to saponify the formyl ester at the reducing end, and readjusted to pH 4.4 with AcOH. After addition of excess NaIO₄ and 24 hrs. overoxidation at 4°, excess NaIO₄ was destroyed. The product of periodate oxidation and NaBH₄ reduction was hydrolyzed: Hydrolysis of the glycolaldehyde acetal residue, with partial liberation of the oxidized sialic acid residue (C7 Sial) was carried out at room temperature, pH 1.5, for 6-12 hrs.,

or

at 37° for 1-2 hrs. A solution of 0.2M acidic compound underwent autohydrolysis, but a dilute solution had to be acidified to pH 1.5 with 0.2N H₂SO₄. For the neutral compound, 0.05N H₂SO₄ was used for room temperature hydrolysis. Hydrolysis at 85°, pH 1.5, for 75-90 min. caused liberation of C7 Sial and hydrolysis of the glycolaldehyde acetal residue, but the glycosidic linkages remained intact. Total hydrolysis was carried out 6-12 hrs. at 100° with 0.5-1.0N H₂SO₄; this destroyed C7 Sial. I (1.34 g.) was oxidized 28 hrs. at 4° with a precooled mixture of 10 cc. 0.2N Na₂CO₃, 85 cc. 0.5N OAc- buffer, pH 4.4, and 85 cc. 0.25M NaIO₄. Excess NaIO₄ was destroyed and the solution was passed through IR-120 (H+) resin on top of IR-45 (OH-) resin, and eluted with 250 cc. H₂O. The eluate was adjusted to pH 6 with Na₂CO₃, evaporated to 5 cc. and reduced (NaBH₄) to give 592 mg. (54%) C7 Sial-(2 → 3)Gal-(1 → 2)-erythritol (II), R_f 0.42 (B). II in 3 cc. H₂O (pH of the solution 1.5) was heated 75 min. at 85° in a sealed tube. The diluted solution was passed through Dowex 1 + 4 (HCO₃-), and eluted with 700 cc. H₂O. The 3rd and 4th 50-cc. fractions gave 305 mg. 2-O-β-D-galactosyl-D-erythritol (III), m. 188-90° (90% EtOH), R_f 0.60 (B), R_f 0.31 (A). The column was next eluted with 1250 cc. 0.02M NH₄HCO₃, the eluate was passed through IR-120 (H+), neutralized with Na₂CO₃, and freeze-dried to give C7 Sial Na salt, (IV) 175 mg., R_f 0.28 (A), R_s 1.32 (Na salt, B), 1.60 (free acid, B). IV (40 mg.) in 1.2 cc. absolute MeOH heated 45 min. under reflux with 23 mg. o-phenylenediamine and kept 24 hrs. at 4° gave 28 mg. (54%) quinoxaline derivative, m. 204-6° (H₂O), [α]_D²⁰ - 112° (c 0.11, DMSO-H₂O 1:1); the quinoxaline derivative of sialic acid m. 229°, [α]_D²⁰ -102° (c 0.27, DMSO-H₂O 1:1). Sialic acid Me ester Me glycoside (V) (235 mg.) in 4 cc. H₂O containing 0.75 cc. N Na₂CO₃ was treated further with 1.5 cc. N Na₂CO₃ during 8 hrs. The solution was adjusted to pH 5 with 1.2 cc. 2N AcOH and kept 15 hrs. at 0° with 10 cc. 0.25M NaIO₄, and reduced (NaBH₄) to give 176 mg. (96%) Me glycoside (VI), of IV R_f 0.29 (A), R_s > 1.61 (Na salt, B), 3.00 (free acid, B), decomposed at 150° without melting (MeOH-Et₂O-petr. ether), [α]_D²⁰ -62.3deg; (c 0.5, MeOH). VI (75 mg.) in 25 cc. absolute MeOH stirred 5.5 hrs. with 250 mg. MeOH-washed Dowex 50 (H+) gave 42 mg. Me ester (VII) of VI, m. 107-9° (MeOH-Et₂O), R_f 0.81 (A), R_s 3.92 (B). VII (5 mg.) in 0.3 cc. MeOH reduced (NaBH₄) gave "N-acetylheptulosaminol" Me glycoside, R_f 0.65 (A), R₃ 2.66 (B), hydrolysis of which with 0.1N H₂SO₄ for 1 hr. at 85° gave "N-acetylheptulosaminol" R_f 0.54 (A), R_s 1.80 (B). Similar reaction of V gave "N-acetylnonulosaminol" Me glycoside, R_f 0.53 (A), R₃ 1.66 (B), hydrolysis of which gave "N-acetylnonulosaminol," R_f 0.45 (A), R₃ 1.16 (B). Sial-(2 → 3)-Gal (2.35 mg.) on NaBH₄ reduction gave compound with R_s 0.83 (B) and R_f 0.163 (A), autohydrolysis of which in 0.025 cc. H₂O for 1 hr. at 85° gave IV and lyxitol. 3'-(N-Glycolylneuraminyllactose (3.3 mg.) from cow colostrum on NaBH₄ reduction gave compound with R₃ 0.36 (B), partial hydrolysis of which gave III and compound with R_s 1.07 (B). Gal-(1 → 3)-GNAC-(1 → 3)-Gal-(1 → 4)-G (VIII) (CA 50, 14564a) (70 mg.) was periodate-oxidized, and NaBH₄ reduced to give compds. with R_f 0.32 and 0.40 (A); hydrolysis with 0.5 cc. 0.05N H₂SO₄ for 75 min. at 85° gave glycerol (IX), R_f 0.61 (A), 26 mg. (54%) of GNAC-(1 → 3)-Gal-(1 → 2)-erythritol (X), R_f 0.255

(A), m. 259-61° (85% EtOH), and 4.5 mg. (13°o) GNAC-(1 → 2)-arabinitol (XI), Rf 0.352 (A). Overoxidation of 35 mg. VIII gave 9 mg. (51%) of XI. Sial-(2 → 3)-Gal(1 → 3)-GNAC-(1 → 3)-Gal-(1 → 4)-G (XII) (CA 57, 2300e) (10 mg.) gave C7 Sial-(2 → 3)-Gal-(1 → 3)-GNAC-(1 → 3)-Gal-(1 → 2)-erythritol (XIII), Rt 0.69 (A), XIII heated 75 min. at 85° at pH 1.5 gave IV and Gal-(1 → 3)-GNAC-(1 → 3)-Gal-(1 → 2)-erythritol (XIV), Rf 0.12 (A), Rt 1.23 (A); the XIII-containing mixture also gave small amts. of C7 Sial-(2 → 3)-Gal-(1 → 3)-GNAC-(1 → 2)-arabinitol (XV), Rt 0.92 (A). XV heated at 85° at pH 1.5 gave IV and Gal-(1 → 3)-GNAC-(1 → 2)-arabinitol (XVI), Rt 1.66 (A). XII (20 mg.) was degraded to 3 mg. XIV and 1 mg. VXI isolated by paper chromatography in solvent A. XIV (1.3 mg.) in 0.2 cc. 0.5N H2SO4 was heated 15 min. at 100°, SO4- was removed by MIH (OAc-), ascending paper chromatography in A showed compds. with the following Rf: erythritol (XVII), 0.50; GNAC, 0.51; galactose, 0.34; III, 0.31; Gal-(1 → 3)-GNAC (XVIII), 0.34; GNAC-(1 → 3)-Gal (XIX), 0.26; and Gal-(1 → 3)-GNAC-(1 → 3)-Gal (XX). XVI in N H2SO4 heated 12 hrs. at 100° gave lyxitol (XXI), Rf 0.44 (A); GN, 0.25; Gal, 0.34; and GN(1 → 2)-arabinitol. XII (5 mg.) was overoxidized and reduced to give XV. Sial-(2 → 6)-Gal-(1 → 4)-G (XXII), Rt 0.76 (A), was obtained in 200-400 mg. yield from 1 l. mother's milk. XXII (300 mg.) in 6 cc. 0.01N H2SO4 was kept 64 hrs. at 40° the solution was desalted with Ba(OAc)2, IR-120 (H+) (12. + 20 cm.), and MIH (OAc-) (1.8 + 20 cm.) to give 144 mg. (85%) lactose, [α]23D 54.6° (c 1, H2O). The MIH-column was eluted with 0.05M NaOAc to give 139 mg. (95%) sialic acid (XXIII). XXIII (120 mg.) gave 149 mg. di-Et dithioacetal lactone, recrystd. from H2O, 37 mg., [α]25D -84° (c 1, MeOH). XXII (830 mg.) in 3 cc. H2O and 200 cc. MeOH was treated at 0° with CH2N2-Et2O. The residue from evaporation was methylated (CA 50, 16812i). Methanolysis, removal of sialyl derivative, and acid hydrolysis gave a mixture of methylated hexoses, which was chromatographed on 110 g. Celite column with H2O-saturated BuOH to give 120 mg. 2,3,6-tri-O-methyl-D-glucose and 120 mg. 2,3,4-tri-O-methyl-D-galactose, the latter was distilled under high vacuum, and recrystd. from EtOAc-cyclohexane, [α]22D 135° (5 min.) → 108.5° (12 min.) (c 0.46, H2O). XXII (19.5 mg.) on overoxidn. and reduction gave a compound (XXIV), Rs 0.76 (B). XXIV in 0.1 cc. H2O kept at 27° gave XVII and C7 Sial-(2 → 1)-Glycerol (XXV), Rs 1.15 (B). XXV in 0.05N H2SO4 heated 75 min. at 85° gave IV and IX. Sial-(2 → 6)-Gal-(1 → 4)-GNAC (XXVI) (6.7 mg.) gave on reduction a compound (XXVII) of R3 0.79 (B). XXVII in 0.067 cc. H2O

was

kept 5 hrs. at 37° to give XXV and 2-acetamido-2-deoxy-D-glucitol (XXVIII), Rf 0.45 (A), Rs 1.27 (B). XXVIII hydrolyzed 12 hrs. at 100° in 0.5NH2SO4 gave 2-amino-2-deoxy-D-glucitol, Rf 0.23 (A). Sial-(2 → 6)-Gal-(1 → 4)-GNAC-(1 → 3)-Gal-(1 → 4)-G (XXIX) (10 mg.) from mother's milk by reduction gave compound (XXX) of Rt 1.06 (A), Rs 0.27 (B). XXX in 0.05 cc. H2O kept 9 hrs. at 37° gave XXV, X, Rs 0.32 (B), and XI, Rs 0.69 (5); XXX heated 75 min. at 85° gave IV, IX, and X. Gal-(1 → 3)-[Sial-(2 → 6)-GNAC]-(1 → 3)-Gal-(1 → 4)-G (XXXI) (50 mg.) from mother's milk by reduction gave a compound (XXXII) of Rt 1.11 (A) and some overoxidized product (XXXIII) of Rt 1.43 (A). Autohydrolysis of XXXII for 2 hrs. at pH 1.5 at 37° gave IX, 3.6 mg. XXXII, and 4.0 mg. of C7 Sial-(2 → 6)-GNAC-(1 → 3)-Gal-(1 → 2)-erythritol (XXXIV), Rt 0.84 (A). XXXII (0.5 mg.) in 0.025 cc. H2O heated 80 min. at 85° gave IV, IX, and X; XXXIV (0.5 mg.) gave IV and X. XXXIV (3 mg.) by reduction gave a

compound

(XXXV) of Rt 1.76 (A), Rs 0.65 (B). Mild hydrolysis of XXXV at 37° at pH 1.5 gave no XXV. Total hydrolysis of XXXV in N H2SO4 at 100°

for 12 hrs. gave D-galactose and IX, but no 2-amino-2-deoxy-D-glucose. Overoxidation of 20 mg. XXXI followed by reduction gave XXXIII. XXXIII by total hydrolysis gave 2-amino-2-deoxy-D-glucose, XXI, and IX; mild hydrolysis of XXXIII gave IV, IX, and XI. Oxidation and reduction of XXXIII (8 mg.) gave compound (XXXVI), Rt 1.73 (A). XXXVI gave on total hydrolysis IX and 2-amino-2-deoxy-D-glucose. Similarly, Sial-(2 → 8)-Sial-(2 → 3)-Gal-(1 → 4)-G (XXXVII) (4.6 mg.), Rt 0.47 (A) from cow colostrum gave compound (XXXVIII), Rf 0.69 (A). Mild acid hydrolysis of XXXVIII at 80° gave IV, III, and XXIII. Lactone of XXXVII obtained by freeze-drying of acidic aqueous solution was degraded as usual to give "N-acetylheptulosaminol" identical with that from degradation of VII. XII (5 mg.) or XXXI (5 mg.) was neutralized with 0.1N Na₂CO₃, diluted with H₂O to 0.5 cc., and heated 10 min. at 100° with 0.5 cc. 0.1N Na₂CO₃. After cooling, treatment with IR-120 (H+), and freeze-drying, the residue was taken up in 0.1 cc. H₂O. GNAc (1 mg.) in 1 cc. 0.05N Na₂CO₃ was treated the same way. XXII by the above alkali treatment showed "chromogen I," stained violet with p-DAB, Rf 0.58 (C), 0.68 (A), traces of "chromogen III," Rf 0.74 (C), 0.83 (A), and Sial-(2 → 3)-Gal, Rt 1.39 (A). XXXI by the alkali treatment gave sialylchromogen I, Rf 0.09 (C), 0.30 (A), and sialylchromogen III, Rf 0.22 (C), 0.41 (A). The solution neutralized to pH 6.5 and treated 28 hrs. at 37° with neuraminidase showed chromogen I and XXIII.

AN 1965:480931 HCAPLUS <<LOGINID::20100316>>

DN 63:80931

OREF 63:14954g-h,14955a-h,14956a-e

TI Determination of the bonding-site of sialic acid residues by periodate oxidation

AU Kuhn, Richard; Gauhe, Adeline

CS Max-Planck-Inst., Heidelberg, Germany

SO Chemische Berichte (1965), 98(2), 395-413

CODEN: CHBEAM; ISSN: 0009-2940

DT Journal

LA German

OSC.G 21 THERE ARE 21 CAPLUS RECORDS THAT CITE THIS RECORD (21 CITINGS)

=> d his

(FILE 'HOME' ENTERED AT 16:11:49 ON 16 MAR 2010)

FILE 'HCAPLUS' ENTERED AT 16:11:59 ON 16 MAR 2010

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L1      1163 S POLYSIALIC OR POLYSIALATE OR COLOMINIC
L2      2358 S (REDUCING END)
L3      15 S L1 AND L2
L4      280618 S CONJUGAT?
L5      4 S L3 AND L4
L6      9 S L3 AND (PY<2004 OR AY<2004 OR PRY<2004)
L7      19279 S SIALIC ACID
L8      69 S L2 AND L7
L9      4 S L4 AND L8
L10     1094518 S OXIDIZ? OR OXIDAT?
L11     4 S L8 AND L10
L12     2 S L11 NOT L9
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=> log hold

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

58.14

58.36

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

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|---------------------|--------|---------|
| CA SUBSCRIBER PRICE | -12.75 | -12.75 |

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STN INTERNATIONAL SESSION SUSPENDED AT 16:43:03 ON 16 MAR 2010

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PASSWORD:

* * * * * RECONNECTED TO STN INTERNATIONAL * * * * *
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FILE 'HCAPLUS' ENTERED AT 17:02:16 ON 16 MAR 2010
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| | SINCE FILE | TOTAL |
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| COST IN U.S. DOLLARS | | |
| FULL ESTIMATED COST | 58.14 | 58.36 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | | |
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| CA SUBSCRIBER PRICE | -12.75 | -12.75 |

=> file registry

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| FULL ESTIMATED COST | 58.14 | 58.36 |
| DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS) | | |
| | ENTRY | SESSION |
| CA SUBSCRIBER PRICE | -12.75 | -12.75 |

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STRUCTURE FILE UPDATES: 15 MAR 2010 HIGHEST RN 1210111-73-1
DICTIONARY FILE UPDATES: 15 MAR 2010 HIGHEST RN 1210111-73-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 8, 2010.

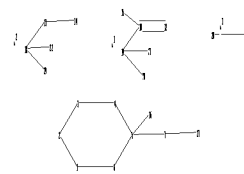
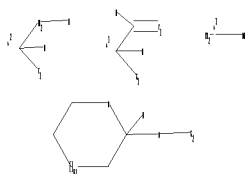
Please note that search-term pricing does apply when
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REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stdoc/properties.html>

=>

Uploading C:\Program Files\STNEXP\Queries\10568043reducingend.str



chain nodes :

7 10 12 13 14 15 16 18 19 20 21 22 23 27 29 30

ring nodes :

1 2 3 4 5 6

chain bonds :

5-7 5-16 7-27 10-12 10-15 10-19 13-14 13-18 18-22 18-29 19-23 19-30
20-21

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6

exact/norm bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-7 7-27 10-12 18-29 19-30

exact bonds :

5-16 10-15 10-19 13-14 13-18 18-22 19-23 20-21

G1:O,N

G2:[*1],[*2]

G3:H,[*3]

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 10:CLASS 12:CLASS
13:CLASS
14:CLASS 15:CLASS 16:CLASS 18:CLASS 19:CLASS 20:CLASS 21:CLASS 22:CLASS
23:CLASS 27:CLASS
29:CLASS 30:CLASS

L13 STRUCTURE UPLOADED

=> s l13

SAMPLE SEARCH INITIATED 17:02:34 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 86680 TO ITERATE

2.3% PROCESSED 2000 ITERATIONS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

9 ANSWERS

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**

PROJECTED ITERATIONS: 1716070 TO 1751130

PROJECTED ANSWERS: 6617 TO 8985

L14 9 SEA SSS SAM L13

=> d l14 scan

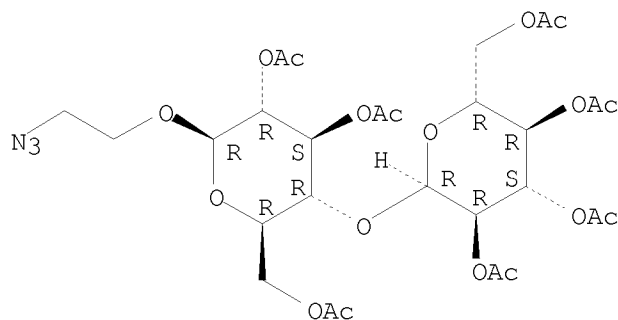
L14 9 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN

IN β -D-Glucopyranoside, 2-azidoethyl

4-O-(2,3,4,6-tetra-O-acetyl- α -D-glucopyranosyl)-, 2,3,6-triacetate

MF C28 H39 N3 O18

Absolute stereochemistry.

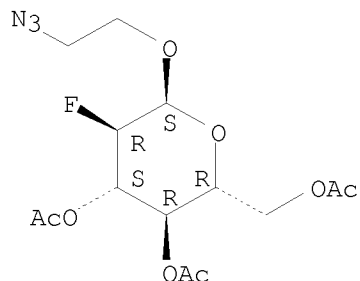


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):3

L14 9 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN α -D-Glucopyranoside, 2-azidoethyl 2-deoxy-2-fluoro-,
 3,4,6-triacetate
 MF C14 H20 F N3 O8

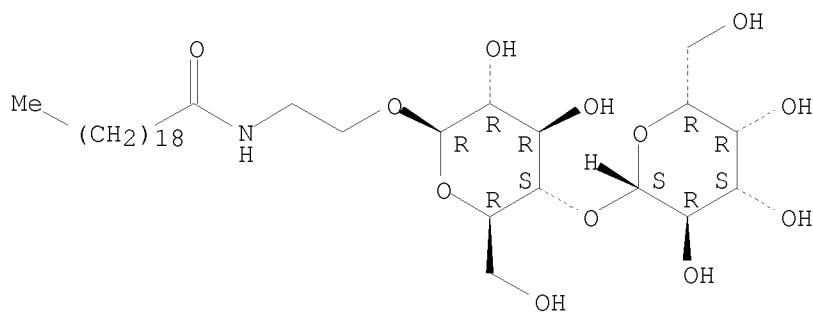
Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L14 9 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN Eicosanamide, N-[2-[(4-O- β -D-galactopyranosyl- β -D-glucopyranosyl)oxy]ethyl]-
 MF C34 H65 N O12

Absolute stereochemistry.

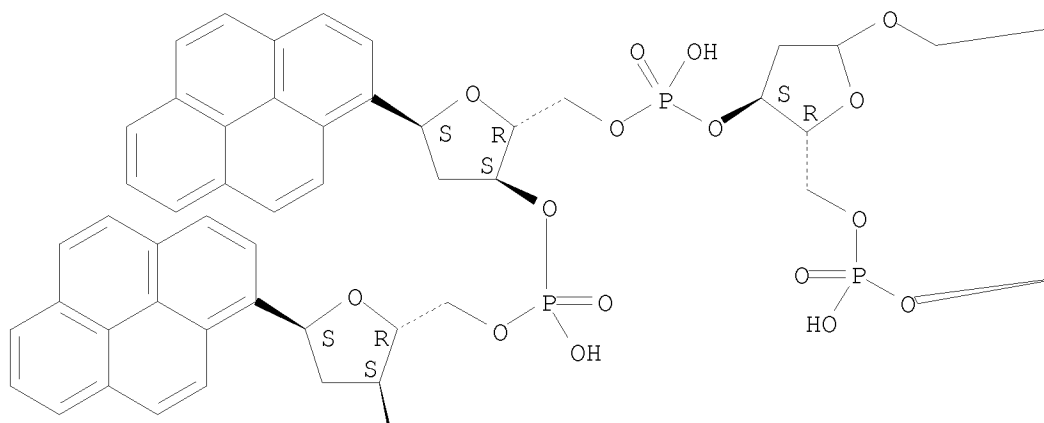


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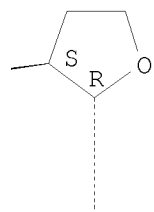
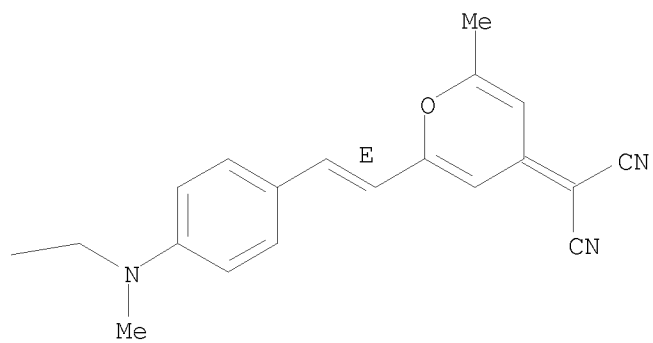
L14 9 ANSWERS REGISTRY COPYRIGHT 2010 ACS on STN
 IN α -3'-Adenylic acid, 1'-de(6-amino-9H-purin-9-yl)-2'-deoxyadenylyl-(3' \rightarrow 5')-1'-de(6-amino-9H-purin-9-yl)-2'-deoxyadenylyl-(3' \rightarrow 5')-1'-de(6-amino-9H-purin-9-yl)-2'-deoxyadenylyl-(3' \rightarrow 5')-(1' ξ)-1'-de(6-amino-9H-purin-9-yl)-2'-deoxy-1'-[2-[[4-[(1E)-2-[4-(dicyanomethylene)-6-methyl-4H-pyran-2-yl]ethenyl]phenyl]methylamino]ethoxy]adenylyl-(3' \rightarrow 5')-1'-de(6-amino-9H-purin-9-yl)-2'-deoxy-1'-(1-pyrenyl)- α -adenylyl-(3' \rightarrow 5')-1'-de(6-amino-9H-purin-9-yl)-2'-deoxy-1'-(1-pyrenyl)-
 MF C82 H89 N3 O33 P6

Absolute stereochemistry.
Double bond geometry as shown.

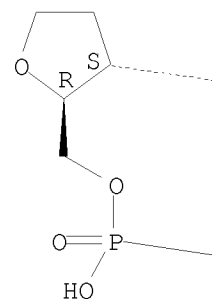
PAGE 1-A



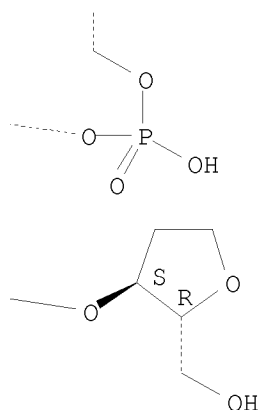
PAGE 1-B



PAGE 2-A



PAGE 2-B



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> s l13 sss full

FULL SEARCH INITIATED 17:03:15 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 1734861 TO ITERATE

100.0% PROCESSED 1734861 ITERATIONS

6152 ANSWERS

SEARCH TIME: 00.00.08

L15 6152 SEA SSS FUL L13

=> file hcaplus

COST IN U.S. DOLLARS

FULL ESTIMATED COST

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

CA SUBSCRIBER PRICE

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ENTRY

192.03

SINCE FILE

ENTRY

0.00

TOTAL

SESSION

250.39

TOTAL

SESSION

-12.75

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FILE COVERS 1907 - 16 Mar 2010 VOL 152 ISS 12
FILE LAST UPDATED: 15 Mar 2010 (20100315/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2009
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2009

HCAPLUS now includes complete International Patent Classification (IPC) reclassification data for the first quarter of 2010.

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=> s l15
L16      3680 L15

=> s sialic or polysialic or colominic
      23865 SIALIC
      861 POLYSIALIC
      307 COLOMINIC
L17      24275 SIALIC OR POLYSIALIC OR COLOMINIC

=> s l16 and l17
L18      84 L16 AND L17

=> s l18 and (PY<2004 or AY<2004 or PRY<2004)
      24050493 PY<2004
      4827512 AY<2004
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=> s l19 not (l16 or l19 or l12)
L20      46 L19 NOT (L6 OR L9 OR L12)

=> s oxidiz? or oxidat?
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      768506 OXIDAT?
L21      1094518 OXIDIZ? OR OXIDAT?

=> s l20 and l21
L22      0 L20 AND L21

=> file stnguide
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=> file hcaplus
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| | 0.00 | -12.75 |

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FILE COVERS 1907 - 16 Mar 2010 VOL 152 ISS 12
 FILE LAST UPDATED: 15 Mar 2010 (20100315/ED)
 REVISED CLASS FIELDS (/NCL) LAST RELOADED: Dec 2009
 USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Dec 2009

HCAplus now includes complete International Patent Classification (IPC) reclassification data for the first quarter of 2010.

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This file contains CAS Registry Numbers for easy and accurate substance identification.

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=> s conjugat?
L23      280618 CONJUGAT?
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=> s 119 and 123
L24      4 L19 AND L23
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=> d 124 1-4 ti abs bib

L24 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN

TI Oligosaccharide therapeutic compositions for use in prophylaxis or treatment of diarrheas

AB The invention provides a therapeutic composition comprising purified fractions of compds. being or containing a pathogen-inhibiting oligosaccharide sequence for use as a medicament. The invention especially describes an oligosaccharide-containing substance or receptor binding to diarrheagenic Escherichia coli and/or zoonotic Helicobacter species, and use thereof in e.g. pharmaceutical, nutritional and other compns. for prophylaxis and treatment of conditions due to the presence of Escherichia coli and/or zoonotic Helicobacter species. The invention is also directed to the use of the receptors for diagnostics of Escherichia coli and/or zoonotic Helicobacter species.

AN 2004:20506 HCAPLUS <<LOGINID::20100316>>

DN 140:87707

TI Oligosaccharide therapeutic compositions for use in prophylaxis or treatment of diarrheas

IN Angstroem, Jonas; Teneberg, Susann; Saarinen, Juhani; Satomaa, Tero; Roche, Niamh; Natunen, Jari; Miller-Podraza, Halina; Karlsson, Karl-Anders; Milh, Maan Abul

PA Biotie Therapies Oy, Finland

SO PCT Int. Appl., 156 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------|---|------|----------|-----------------|--------------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | WO 2004002495 | A1 | 20040108 | WO 2003-FI528 | 20030630 <-- |
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| | EP 1531832 | A1 | 20050525 | EP 2003-761605 | 20030630 <-- |
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| | AT 428430 | T | 20090515 | AT 2003-761605 | 20030630 <-- |
| | IN 2004KN01960 | A | 20060721 | IN 2004-KN1960 | 20041220 <-- |
| | US 20060014717 | A1 | 20060119 | US 2005-518297 | 20050824 <-- |
| PRAI | FI 2002-1275 | A | 20020628 | <-- | |
| | FI 2003-564 | A | 20030414 | <-- | |
| | WO 2003-FI528 | W | 20030630 | <-- | |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OSC.G 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN

TI Sialoside Specificity of the Siglec Family Assessed Using Novel Multivalent Probes: Identification of Potent Inhibitors of

Myelin-Associated Glycoprotein

AB Ten of the 11 known human siglecs or their murine orthologs have been evaluated for their specificity for over 25 synthetic sialosides representing most of the major sequences terminating carbohydrate groups of glycoproteins and glycolipids. Anal. has been performed using a novel multivalent platform comprising biotinylated sialosides bound to a streptavidin-alkaline phosphatase conjugate. Each siglec was found to have a unique specificity for binding 16 different sialoside-streptavidin-alkaline phosphatase probes. The relative affinities of monovalent sialosides were assessed for each siglec in competitive inhibition studies. The quant. data obtained allows a detailed anal. of each siglec for the relative importance of sialic acid and the penultimate oligosaccharide sequence on binding affinity and specificity. Most remarkable was the finding that myelin-associated glycoprotein (Siglec-4) binds with 500-10,000-fold higher affinity to a series of mono- and di-sialylated derivs. of the O-linked T-antigen (Gal β (1-3)-GalNAc α OThr) as compared with α -methyl-NeuAc.

AN 2003:613961 HCAPLUS <<LOGINID::20100316>>
DN 139:334573
TI Sialoside Specificity of the Siglec Family Assessed Using Novel Multivalent Probes: Identification of Potent Inhibitors of Myelin-Associated Glycoprotein
AU Blixt, Ola; Collins, Brian E.; van den Nieuwenhof, Ingrid M.; Crocker, Paul R.; Paulson, James C.
CS Departments of Molecular Biology and Molecular and Experimental Medicine, Scripps Research Institute, La Jolla, CA, 92037, USA
SO Journal of Biological Chemistry (2003), 278(33), 31007-31019
CODEN: JBCHA3; ISSN: 0021-9258
PB American Society for Biochemistry and Molecular Biology
DT Journal
LA English
OS CASREACT 139:334573
OSC.G 72 THERE ARE 72 CAPLUS RECORDS THAT CITE THIS RECORD (72 CITINGS)
RE.CNT 78 THERE ARE 78 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN
TI Preparation and biological evaluation of radiolabeled antibodies with selected carbohydrate modifications
AB Two carbohydrates, N-acetylgalactosamine (GalNAc) and galactose- β -1,3-GalNAc were attached to human IgG (hIgG) by a novel linking reagent, hexafluoroglutaric acid di-Me ester. Fluorine-19 NMR signals were used for the determination of the conjugation ratio. A third carbohydrate, sialic acid, was conjugated via reductive amination and the conjugation ratio determined by a resorcinol assay. The biol. behavior of these radioiodinated antibodies with carbohydrate modification in normal mice indicates an enhanced liver uptake at 15 min post-injection with an associated change in circulating blood levels occurs for the galactose-based hIgG prepns. However, no significant differences in the biodistribution were observed for the sialic acid conjugate. These studies confirm the potential of carbohydrate antibody conjugation for modifying the behavior of antibodies in immunoscintigraphy and radioimmunotherapy.

AN 1993:554983 HCAPLUS <<LOGINID::20100316>>
DN 119:154983
OREF 119:27661a,27664a
TI Preparation and biological evaluation of radiolabeled antibodies with selected carbohydrate modifications
AU Qi, P.; Sykes, T. R.; Koganty, R. R.; Selvaraj, S.; Noujaim, A. A.
CS Fac. Pharm., Univ. Alberta, Edmonton, AB, Can.
SO Nuclear Medicine and Biology (1993), 20(4), 453-9

CODEN: NMBIEO; ISSN: 0883-2897

DT Journal
LA English

L24 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN

TI Use of synthetic antigens with the carbohydrate structure of
asialoglycophorin A for the specification of Thomsen-Friedenreich
antibodies

AB The panagglutination phenomenon described by Thomsen and Friedenreich (TF)
is due to the reaction of naturally occurring TF-antibodies with the
carbohydrate group β -D-Gal-(1-3)-D-GalNAc of desialylated glycophorin
A, the major glycoprotein component of the erythrocyte membrane. The
specificity of human TF-antibodies reacting with this disaccharide was
investigated by hemagglutination inhibition assay and RIA using various
synthetic oligosaccharides and neoglycoproteins as well as
asialoglycophorin A. TF-antibodies represent a heterogeneous mixture of
carbohydrate-specific antibodies. The disaccharide
 β -D-Gal(1-3)-D-GalNAc is the common structure recognized by all
TF-antibodies. However, the conjugation mode of the
carbohydrate to the carrier protein is important for defining the
specificity of different subpopulations of TF-antibodies. The immunol.
reaction depends on the configuration of the glycosidic linkage as well as
on the chemical nature of the aglycon, which is coupled to the disaccharide.
The heterogeneity of natural TF-antigens may be due to the wide
distribution of the carbohydrate structure β -D-Gal(1-3)-D-GalNAc.
The characterization of TF- or TF-like antibodies directed to particular
natural TF-antigens (e.g. asialoglycophorin A, tumor TF-antigens,
glycolipids, bacterial antigens) requires TF-analogs, which contain the
addnl. mol. regions together with the TF-disaccharide. These structures,
apart from the TF-hapten, are obviously important for defining the
immunodeterminant group of TF-antigens of different origin.

AN 1985:469495 HCAPLUS <<LOGINID::20100316>>

DN 103:69495

OREF 103:11169a,11172a

TI Use of synthetic antigens with the carbohydrate structure of
asialoglycophorin A for the specification of Thomsen-Friedenreich
antibodies

AU Hoeppepner, W.; Fischer; Poschmann, A.; Paulsen, H.

CS Abt. Klin. Immunopathol., Univ.-Kinderklin., Hamburg, D-2000/20, Fed. Rep.
Ger.

SO Vox Sanguinis (1985), 48(4), 246-53

CODEN: VOSAAD; ISSN: 0042-9007

DT Journal
LA English